

PRODUCT IDENTIFICATION



Product Name: Hydrochloric Acid 5% Technical Grade

CAS Number: 7647-01-0

Molecular Formula: ClH

Molecular Weight: 36.46 g/mol

Grade: Technical Grade

Purity / Concentration: 5%

Synonyms: Hydrochloric Acid Solution, Muriatic Acid

PRODUCT OVERVIEW

Alliance Chemical offers 5% Technical Grade Hydrochloric Acid, a clear and colorless solution precisely formulated for reliable chemical processing. With a verified assay of 5.04% and minimal impurities like iron and heavy metals, this product serves as a consistent reagent for pH adjustment and surface treatment applications.

Grade Significance: Technical Grade indicates that the product is manufactured for industrial and laboratory applications where high functional performance is required but pharmaceutical-level purity is not necessary.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (Titration)	%	5.04	4.5	5.5	Titration
Color (APHA/Hazen)	APHA	2.5	0	10	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.0228	1.0208	1.0248	Hydrometer @ 20°C
Residue On Evaporation	ppm	10	0	50	Evaporation
Heavy Metals As Pb	ppm	0.0134	0	1	ICP-MS (as Pb)
Iron (Fe)	ppm	0.0134	0	1	ICP-MS
Sulfate So4	ppm	0.14	0	2.7	ICP
Sulfite So3	ppm	0.07	0	9.46	ICP

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, colorless liquid	Odor	Pungent, acrid odor
Form	Liquid	Boiling Point	Not characterized for the 5% solution
Melting / Freezing Point	Not characterized for the 5% solution	Specific Gravity	1.025
Solubility	Soluble in water and organic solvents	Molecular Formula	ClH
Molecular Weight	36.46 g/mol	Vapor Pressure (20°C)	20 mmHg
Viscosity (25°C)	0.89 cP	Refractive Index (20°C)	1.332
Density (25°C)	1.01 g/mL		

APPLICATIONS

1. **Water Treatment** — This solution is used to effectively lower the pH levels in water treatment systems to maintain optimal chemical balance.
2. **Metalworking** — It serves as a pickling agent to remove oxides, scale, and other impurities from metal surfaces prior to further processing.
3. **Laboratory Research** — The consistent concentration makes it an ideal reagent for various analytical procedures, including precise titration experiments.
4. **Chemical Manufacturing** — It acts as a versatile reagent in a wide array of chemical synthesis reactions where a dilute acid source is required.

STORAGE & HANDLING

Due to its corrosive nature, this acid must be stored in specialized containers to prevent damage to metallic infrastructure. Proper containment is essential to mitigate the risks of severe skin burns and respiratory irritation, ensuring workplace safety and product integrity.

- Store in a cool, dry place away from direct sunlight.
- Use corrosion-resistant containers (e.g., HDPE or glass).
- Avoid contact with incompatible materials such as strong bases and oxidizers.
- Ensure proper ventilation in storage areas to prevent vapor accumulation.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Danger**



Hazard Statements:

- H290: May be corrosive to metals
- H314: Causes severe skin burns and eye damage
- H335: May cause respiratory irritation

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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